

Identifying Metamorphic Rocks

Name: _____ Date: _____

Table: _____ Section: _____

Background Vocabulary

Non-Foliated Rocks or Granular: Rocks that have microcrystalline or small grains.

Foliated Rocks: Rocks that have different planar (layered) patterns with small to larger grains.

Slaty cleavage: fine grained texture that splits along one direction.

Schistose: Schistosity is a foliated texture produced by parallel alignment of platy minerals such as quartz, feldspar and mica. The minerals tend to be small in size.

Gneissic: Coarsely grained foliated texture in which minerals of different composition occur in alternating layers or bands of light colored (quartz and feldspar) with darker (hornblende and mica) ferromagnesian mineral layers.

Lineation: Foliation produced by elongate minerals such as hornblende arranged subparallel to each other producing single direction of mineral grains in the rock.

Parent rock: Refers to the original rock from which something else was formed. It is mainly used in the context of soil formation where the parent rock normally has a large influence on the nature of the resulting soil.

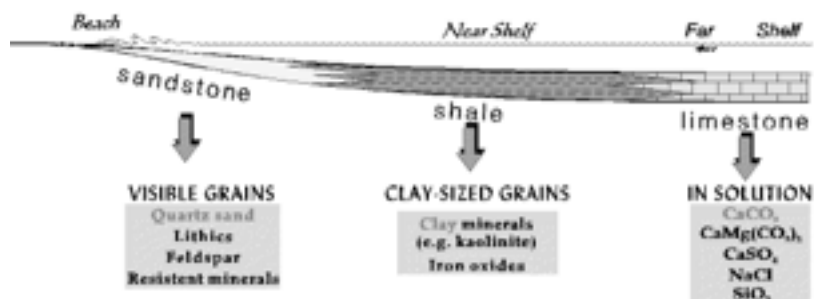
Sedimentary Attractors: All the processes in the sedimentary system are "attracted" to these three end products. This is true regardless of what you start with. The three attractors in the simple ideal model are not isolated, however; each one stands for a class of weathering products.

Quartz sandstone = all visible grains, including such ones as incompletely weathered feldspar from the granodiorite in the simple ideal model.

Shale = all clay sized grains (clay is a generic name; there are many kinds of clay minerals as well as other minerals that are clay sized)

Limestone = all dissolved minerals, including not only calcite CaCO_3 , but also halite (table salt; NaCl), and gypsum ($\text{CaSO}_4 \cdot \text{H}_2\text{O}$) among others.

On the chart below we can see these additional weathering products.



For the following table, label the following characteristics:

Grain Texture: Foliated or Granular

Foliation: Slaty Cleavage, Schistose, Gneissic, or Lamination

Sedimentary Attractor: Quarts Sandstone, Limestone, Shale

Rock Sample	Grain Texture	Foliation	Sedimentary Attractor
Gneiss			
Slate			
Quartzite			
Schist			
Marble			

Analyze & Conclude

1. Which rock was hardest to identify? Give reasons to your answer.

2. Which samples are granulated? What characteristics indicate they are granulated?

3. Which samples are foliated? What characteristics indicate they are foliated?

4. Which samples have all three sedimentary attractors?

5. Identify the parent rocks for each sample.